



## Assessment of Waste Generation Rate in Teaching Hospitals of Metropolitan City of Pakistan

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### Abstract

Hospital waste management is of vital significance owing to its contagious and hazardous nature as it can produce detrimental effects for both humans and the environment. This work aimed to examine types of waste with respect to waste generation rate in multiple teaching hospitals of metropolitan Lahore. A structured questionnaire survey, site visits, interviews and meetings were conducted in seventeen teaching hospitals. The results have shown that total hospitals average waste, infectious, non-infectious and waste generation rate in Lahore teaching hospitals were 38978 kg/day, 10789 kg/day, 28189 kg/day and 3.7 kg/bed/day, respectively. It is concluded that maximum waste generated in Mayo hospital, Jinnah hospital, Services hospital and Lahore general hospital was 16%, 12%, 12% and 10%, respectively, as per maximum patient's visits. Positive liner correlation was between number of beds ( $P=0.917$ ), number of accidents and emergency patients ( $P=0.75$ ), infectious waste ( $P=0.998$ ) and ( $P=1$ ) with total waste. A straight line of linear regression was between (0.9966) infectious waste and (0.9995) general waste with average waste. Although, waste collection practices in these teaching hospitals were observed satisfactory but required training of doctors, nurses and hospital paramedical staff regarding infectious and general waste segregation. It is suggested that hospital staff, waste management and waste collection workers and respective waste management companies should be well trained and aware regarding infectious and non-infectious waste segregation, handling and disposing off procedures.

**Keywords:** Teaching Hospitals; Infectious and Non-infectious Waste; Waste Generation; Incineration; Waste Disposal.

## 1. Introduction

From last some decades, hospital waste management and disposal have become big issue globally. It is difficult to follow scientific and safe methods without disturbing environment. To maintain a sustainable safe environment, it is need of hour to emphasis on problem of hazardous hospital waste generation, waste segregation, waste collection and safe waste disposal approaches [1]. In general, hospital waste is a mixture of general waste, testing lab waste, medicinal chemicals, polymer or metallic vessels and pathological waste [2, 3]. Medicinal waste, contiguous waste and residential waste are main categories of hospital waste. Medicinal waste is stated as refuse generated during patient check-up, treatment and vaccination. Contiguous waste is specified as the part of waste relating to patients with transferable disease. Many time medicinal wastes are presumed as contiguous waste, as both are gathered collectively. Heterogeneous hospital waste is considered to be contiguous waste [4]. These contiguous wastes are the reason of various illnesses like cholera, plague, tuberculosis, ADIS (HIV), hepatitis and diphtheria [5].

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